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THE CASE FOR EMPLOYEE EDUCATION.

BY- DUBOIS, EDWARD A.C.
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BUSINESS HAS A MORAL RESPONSIBILITY TO PROVIDE EDUCATION FOR ITS EMPLOYEES SINCE IT PROFITS FROM THE FACT THAT AMERICA HAS BECOME AN EDUCATION STATE, WITH THE INCREASED EDUCATION OF THE LABOR FORCE ACCOUNTING FOR 23 PERCENT OF ECONOMIC GROWTH BETWEEN 1929 AND 1957, AND SINCE BUSINESS ITSELF HAS CONTRIBUTED TO THE CRISIS IN EDUCATION BY INSISTING ON A COLLEGE DEGREE. IN ADDITION TO FORMAL TRAINING PROGRAMS, COMPANIES SHOULD PROVIDE GENERAL EDUCATION TO SATISFY THE EMPLOYEES' NEED FOR SELF-ACTUALIZATION. THE PROGRAMS MAY BE CONDUCTED IN THE PLANT OR PROVIDED BY A COMMUNITY EDUCATIONAL INSTITUTION, BUT THEY SHOULD BE AT LEAST PARTLY ON EMPLOYER TIME AND AT LEAST PARTLY FINANCED BY THE COMPANY. THE COST TO BUSINESS OF LABOR TURNOVER IS NOT PRECISELY EVALUATED BUT IT IS A SOURCE OF ANXIETY. THERE IS EVIDENCE THAT THE NEED FOR SELF-ACTUALIZATION, RATHER THAN ANY LOWER-LEVEL NEED SUCH AS HIGHER PAY, IS A CONTROLLING REASON FOR TURNOVER. IT MAY BE THAT A COMPANY MAY SPEND AT LEAST AS MUCH ON UNNECESSARY TURNOVER AS IT MIGHT SPEND ON A PROGRAM OF EMPLOYEE EDUCATION TENDING TO PREVENT TURNOVER, WITH ITS ATTENDANT RECRUITMENT COSTS. THIS DOCUMENT IS ALSO AVAILABLE, FOR $3.00, FROM THE AMERICAN MANAGEMENT ASSOCIATION, 135 WEST 50TH STREET, NEW YORK CITY 10020. (LY)

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THE CASE FOR EMPLOYEE EDUCATION

Edward A. C. Dubois

AMERICAN MANAGEMENT ASSOCIATION
Personnel Division

EDWARD A. C. DUBOIS is presently Manager, Education, Polaroid Corporation, Cambridge, Massachusetts. He has been with Polaroid since 1951. Dr. Dubois received his B.A., M.A., and Ed.D. from Harvard. He was recently elected a member of the American Psychological Association.

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THE CASE FOR EMPLOYEE EDUCATION •

EDWARD A. C. DUBOIS

A GROWING AMOUNT OF EMPLOYEE EDUCATION, as distinguished from employee training, is going on in American business today. In any enterprise large enough to have formal training for its people, it may be vitally important for management to be able to distinguish education and training. Unless it clearly understands this difference, management may flatter itself that it is planning for the future when it is merely coping with the present. One crucial element determines whether a given procedure is education or training for a given employee, and that is not the nature of what is learned but the nature of the motivation which impels him to learn it.

Once education and training have been thus distinguished, management can find three reasons for justifying educating, and not merely training, its employees. First, when a business is considered as a component of the whole American economy, a continuing rise in employees' educational levels so demonstrably serves the national interest that employee education appears to be merely cooperating with the inevitable.

In addition, those local communities to which an enterprise pays property taxes and from which it draws employees respond in important ways to visible programs of employee education. Finally, the education, as distinguished from the training, of employees may reasonably be considered an offset to labor turnover costs which, for a number of largely invisible causes, are higher than they might be.

The complete case for employee education thus includes reasons of public policy, of community relations, and of payback. The second and third of these may in a few years impel more individual enterprises to adopt programs of education for their employees. If enough firms are so moved, there is little doubt that the implications of the first reason will add powerfully to the well-documented effect which rising levels of education have had for more than a generation on the Gross National Product. If they are not, government may have to fill the breach and take the place of business in supporting the education of employees.

WHAT IS EMPLOYEE EDUCATION?

In order to understand the nature of education in the business situation, we need to realize, first of all, the distinction between formal and informal training. More important, we must see how human motivation is a basis for making the distinction between training and education. Once we have established that the nature of the motivation, rather than the content of the learning, determines the existence of education, we can look at different ways of educating employees and attempt to draw up an empirical formula by which management can compare its employee-education program with its program of formal training—a formula that determines a range of expenditures for employee-education programs from the minimal to the very liberal for any given enterprise.

Formal training versus informal training. No enterprise operates without a training program, but a substantial amount of it is always informal —the kind that has been described as "Sit by Joe"—"Watch Nellie do it." Sometimes this kind of training takes the place of an indoctrination program, which thereby occurs in spite of management's belief that it doesn't need one.

A formal training program contrasts with an informal one in that it takes the trainee from initial behavior to desired "criterion" behavior

by a series of successive approximations and lets him see them as such. Not only is he learning: someone shows him that he's learning. Each successive approximation in the training process has the following cyclic structure:

1. Explanation and demonstration: "What am I supposed to do? How do I know when I've done it right? How do you know?"
2. Practice: "Have I done it right?"
3. Feedback: "This, this, and this—yes; that—no."

Modest assumptions suffice to demonstrate the returns of formal training in even a small enterprise. Let us suppose a firm employing 100 persons in 1965, with average output (net sales) of $9,290 per person engaged. This was just the average output, computed in 1958 dollars, per employee engaged in the United States domestic economy in 1965, according to the Bureau of the Census. Thus the net 1965 sales of such an enterprise would have been $929,000 in 1958 dollars.

Assume a single trainer who averages ten hours a year, with every employee from custodian to president, showing him how to do his job better. This uses 1,000 hours of the trainer's year, and he needs the other 1,000 to study jobs and prepare training aids. Training costs, in 1958 dollars, might be as follows:

Trainer (salary, fringes)	$12,000
Equipment and space	7,000
Training time of employees (10 hours x 100 employees x $4/hr.)	4,000
	$23,000

An annual increase of 2.5 percent in the average productivity of the labor force of this firm would pay for the costs of formal training. It is easy to poke holes in several of the admittedly whimsical assumptions made above, of course. Readers familiar with formal training programs will also find it easy, however, to remember for every case where gains were as little as 2.5 percent other cases where productivity gains were 25 to 50 percent.

Why, then, isn't more formal training being done? Why are so many new workers being trained by letting them watch Nellie do it? We can only suppose that it is because the savings that can be made by formal training are invisible until after it occurs, whereas training costs like those itemized above are visible beforehand. The reader may supply other reasons.

Formal training and education. To understand the difference between formal training and employee education, we need to introduce a simple theory of human motivation. A. H. Maslow ranks human needs in his often-quoted hierarchy as follows:

1. Physiological needs.
2. Safety needs.
3. Need for belongingness and love.
4. Need for esteem.
5. Need for self-actualization.

As human needs, these are individually self-evident, to the point where the list may seem too obvious. However, in contrast with lists of related needs arranged in groups and used experimentally by some psychologists, Maslow's list is not arbitrary: a single principle leads us from the low-numbered to the high-numbered needs. This is the principle of successive stress. As a low-numbered need is satisfied by one's environment, one comes under the stress of the next higher need.

Herzberg, Mausner, and Bloch call the first two needs the "dissatisfiers."[1] The employee's salary and his working conditions bother him greatly if they are inadequate, but they do not motivate him, once they become adequate, to push himself to higher levels of achievement. Formal training tends to supply explicit knowledge that one is meeting standards; such knowledge affords the employee a sense of pride in his achievement, and certainty that he is appreciated in his current job. It thus meets the third and fourth needs of Maslow's list for the individual employee—in addition to its economic justification for the employer. What about the fifth need?

The crucial difference between education and any kind of formal training program, regardless of its excellence as a program and regardless of the abstract nature of its content, lies in the nature of the fifth need. The need for self-actualization is a need to work out our own fan-

[1] Herzberg, Frederick, Bernard Mausner, and Barbara Bloch Snyderman, *The Motivation to Work,* John Wiley & Sons, New York, 1959.

tasies, to bring our dreams into actuality. If the initiative for a learning experience comes from the employee himself, the experience represents for him a chance to actualize his own possibilities. He may confidently and securely participate in his work team and enjoy his supervisor's esteem; in other words, all his needs below the fifth level may be met on the job. Nevertheless, he knows that he has possibilities within him which *they* don't dream of—that is, his supervisor and his peers don't dream that he has those possibilities within him, but *he* does.

Usually, but not always, the most important dream that an employee hopes to actualize by a learning experience is his next, higher-level job. By supplying him with a choice of courses which he may take or refuse, just as his fancy dictates, we create an entirely different kind of climate in a business. To be more exact, we help people to impart a new and different kind of structure to their daydreams when we offer them reasonably accessible means to further their education. Maslow's hierarchy of needs tells us that once a man's first four needs are satisfied, his dreams become important, or, to say it otherwise, it becomes important to him to become the reality of his dreams.

To this, management may not unreasonably rejoin: "With all the other things we do for people, do we have to supply them dreams, too?" The answer to this is that if they are people, they are going to dream anyway to the extent that we have met their lower-level needs. If men's dreams are in no way capable of being related to reality, they are the more readily tempted to live beyond their income, to quit without reason, to have accidents on and off the job, and to become aggressively and unpredictably hostile. Even if an educational program does nothing more for an employee than to give him a chance to measure his dreams against reality, in the same way a formal training program allows him to measure his performance against carefully defined standards, it serves an important need for him as a human being.

It is important to insist on the distinction between training and education because of its effect on the employee who is learning. If employees are impelled by the incentive of higher pay to enter a program in which subjects of recognizably academic content are taught as well as courses closely related to the duties of the new job, they may bitterly resent the academic, "educational" part of the program. By our definition, these courses are not education; they are merely training subjects which are less relevant to the task in hand than the others. It may be objected that the employees are in the program because they chose it, that nobody made them sign up. But this is fallacious. If the program were so designed that the closely job-related courses were all that was compulsory, and the courses with academic content were optional, it would now be proper, by our definition, to call the latter courses educational. Experience suggests that the trainees would probably leave the education portion of the program strictly alone until they no longer felt insecure in their new assignments. In practice, this almost certainly means, until they got their first merit increases as a result of their successful completion of the first block of the training program.

It should be emphasized that identical courses may fill a training need for one man in a department and an educational need for another. A group of trainee mechanics may spend eight hours a day in a training program which includes a course in shop mathematics. When they bid into the program, they committed themselves to take this course along with the others. They can no more elect to drop it than they can decline to learn how to run a lathe. On the other hand, a group of men with several years' service in the same machine shop may feel the need of brushing up their skills in this subject. If, in answer to their request, their supervisor arranges for a course, it is certainly a privilege to attend. It is not an obligation, however; if one wishes to drop out, there is no compulsion on him to stay. It makes no difference whether the course, in the latter instance, is offered on company time or on the men's own time; by our definition, it is an educational opportunity. The former course, on the contrary, is training.

Conditions and costs. We have compared employee education with formal training programs. The latter are usually conducted at the employer's expense, on the employer's premises, on company time, and in a classroom or tutorial

EMPLOYEE EDUCATION—ALTERNATIVES

		In-house		Tuition-refund			
		Staff-taught	Nonstaff-taught	Degree-related		Nondegree-related	
				Job-related	Nonjob-related	Job-related	Nonjob-related
Classroom	Company time	1.	2.	7.	8.	13.	14.
Classroom	Employee time	3.	4.	9.	10.	15.	16.
Correspondence		5.	6.	11.	12.	17.	18.

TABLE 1

environment. Employee education may be provided in all these ways and in some others.

If employee education is provided off the employer's premises, its cost may still be borne in whole or in part by the employer. If the employee bears all the cost, there is, strictly speaking, no employee education involved, since the employee is as free as any other citizen to invest his own time and funds in education. Knowledge or belief that this investment may later earn him a promotion in no sense constitutes for the employee encouragement from his employer. On the contrary, the employer is free in any case to hire an outsider with the same educational qualifications into the job to which the employee aspires. If the employer decides instead to promote the employee who has educated himself at his own expense, presumably this merely reflects familiar laws of supply and demand. Thus employee education must not only be freely chosen by the employee, but also entail some cost to the employer. The first stipulation makes it *education*; the second makes it *employee* education.

Management can make many of the decisions involved in setting up a program of employee education with the aid of a well-ordered table of the kind used by actuaries. For most purposes no more than six pairs of alternatives are involved in making the broad decisions about a program. Listed in random order, the following are to be thought of as the specifications of courses which the program might offer or support:

1. In-house/tuition-refund.
2. Degree-related/nondegree-related.
3. Job-related/nonjob-related.
4. Classroom/correspondence.
5. Released (company)-time/employee-time.
6. Staff-taught/nonstaff-taught.

The resulting table would have only 18 cells, rather than the possible 64, because not all of the alternatives apply in every case; and as it is,

some of those listed may appear to be unrealistic.

A convenient way to use Table 1 is to consider all 18 of its cells, not in numerical or any other arbitrary order, but in roughly the order of descending claim on management's support. In other words, we shall start with those cells which claim priority in even a minimal program of employee education, move on to those which would be found only in programs of increasing liberality, and end with those cells which would not be supported by even a very liberal program, or which in practice are hardly available for support at all.

Cell 9. Any new program of employee education should begin here if there is any adequate degree-granting institution within commuting distance for its employees. A liberal program would refund full tuition here; a less liberal program might refund 80 or 75 percent; some companies refund up to $200 or $300 per semester. Refunds are typically made upon evidence of payment to the school plus evidence of a passing grade in the course and may or may not be loaded to compensate the employee for the taxes which he pays on the refund as on any other compensation from his employer.

Cell 15. If the firm is within commuting distance of good trade schools, courses of this kind should attract a steady stream of nonexempt employees without college qualifications. The program should support these on exactly the same basis as in Cell 9.

Cell 4. This is the right place to begin an in-house program. Get local high school teachers to give algebra, trigonometry, or both. These are the most valuable subjects to encourage students who will ultimately go on to Cell 15 or even Cell 9, but whose mathematical deficiencies would keep them from entering the mainstream of education unless they could get their feet wet slowly. Students who hope to go on to tuition-refund courses on their own time are willing to invest their own time in Cell 4.

Cell 10. A moderately liberal program would pay for these on exactly the same basis as in Cell 9, recognizing that a degree program ordinarily has distribution requirements for courses outside the student's major field.

Cell 2. Professionals who work for the firm, but who are not themselves educators, may be used to teach science or mathematics courses in such a situation—and at times when employees want the courses but local high school teachers are not available. Such professionals (engineers, scientists) will, unfortunately, usually lack the necessary classroom skills. Failure of an honest attempt to make courses of this kind go over may be precisely what is needed to convince management of the need for a full-time education staff.

Cell 3. The place to begin using staff teachers is probably with report-writing courses here, aimed at first-line supervisors and using highly job-relevant materials prepared by the teachers themselves, in consultation with the supervisors' own department heads or general supervisors. Such courses will be well oversubscribed in many companies.

Cell 1. Once management begins to use its own staff of educators, it should plan to give a certain proportion of all courses on company time, if only to avoid bunching up all course offerings in the period from 4 to 6 P.M. The same staff teachers who teach report writing to supervisors (Cell 3) can teach remedial grammar classes to hourly people on company time. Conceivably they might also teach reading to illiterate employees if management is concerned about helping promising illiterates to promotion opportunities. A surprising number of both groups may be motivated to go to the courses in Cell 15 if they are encouraged by success here.

Cells 7 and 8. These courses would hardly apply to anyone except the rare senior nonexempt employee who is being aided to learn a completely new career field within the company and who is not qualified for college work.

Cell 16. A very liberal program would support some of these, particularly in the usual academic fields: courses in languages or other cultural subjects in local adult education centers. The liberality is more apparent than real, however, since most of these courses cost less than $30 per semester nowadays and attract housewives not in the labor market much more than they attract working men or women. Even a very liberal program would not support some of the more expensive courses which belong in this cell, like flying lessons or scuba diving lessons.

ANNUAL COSTS OF EMPLOYEE EDUCATION: AN EMPIRICAL FORMULA

(t = annual cost of all formal training; N = number of company employees, exempt and nonexempt)

Program	*Cells: Table 1*	E_i = *Cost*
(1) Minimal	[9, 15, 4]	$E_1 = \frac{1}{4}t + \$\ 5N$
(2) Moderately liberal	(1) + [2, 10, 3, 1]	$E_2 = \frac{1}{2}t + \$10N$
(3) Liberal	(2) + [7, 8, 13]	$E_3 = \frac{3}{4}t + \$15N$
(4) Very liberal	(3) + [16, 5, 6, 17]	$E_4 = t + \$20N$

TABLE 2

Cells 5 and 6. Although they are almost unheard of in employee-education programs, courses of this kind are offered by some of the correspondence schools, under such names as "correspondence study with resident seminars."

Cell 17. These should probably be supported only if there is no reasonably equivalent course in an educational institution within commuting distance. The national drop-out rate of 60-70 percent in correspondence courses indicates the difficulty of screening prospective students for adequate motivation. If a man's employer allows him to take a correspondence course on the usual tuition-refund conditions, the refund bait may induce the employee to risk his money even more recklessly than the man who expects no refund.

Cell 18. Very few employees take this kind of course or expect company support if they do.

Cell 11 and 12. For practical purposes, unfortunately, these are probably unavailable today anywhere in the United States.

Cell 14. Even a very liberal program would hardly support this kind of course.

As an alternative to the verbal descriptions of the cells of Table 1, a rough formula (1967 price levels) may be used to characterize a given employee-education program as minimal, moderately liberal, liberal, or very liberal (see Table 2).

The convenience of the formula lies in the fact that formal training, as defined above, regularly precedes employee education in the development of a firm. In other words, firms often have formal training programs without any employee-education program, whereas the reverse rarely occurs. Hence, in any practical situation, there will always be a value of "t" available. Given a company's annual costs for formal training and its employee population, the formula suggests costs for employee education which roughly approximate the commitments implied by the cells of Table 1. As noted above, Cells 11, 12, 14, and 18 would today hardly be found even in a very liberal program such as Program (4) of Table 2.

EMPLOYEE EDUCATION AND THE EDUCATION STATE

Some feel that the most important single factor that explains how the United States has changed its material environment in the past generation is the increase in the educational level of the American population. There are powerful social forces operating to maintain this trend, and business is among the most dynamic of them all. Existing provisions for educating the population, however, are inadequate to support the prospective increase in the demand for education. Within the next decade, much of the task of educating Americans is going to be recognized as the task of educating employed adults. I believe that if the employers of these adults do not assume much of the responsibility for educating them and encouraging their education, the Federal Government will be obliged to: both the State governments and the private academic establishment are heavily burdened now.

The single fact which, more than any other, shows how education has come to pervade American society is the growth in college attendance. From 1889 to 1965, the proportion of school children to all children aged 5 to 17 grew from 75.2 to 97.1 percent. However, in the same period the higher-education ratio, which is the proportion of youths enrolled in higher education to all youths aged 18-21, grew from 3.0 to 43.9 percent. Some are predicting

that the higher-education ratio will reach 50 percent by 1970 and 60 percent by 1980. Most of the additional college population in the next decade will probably be handled by the state university systems. When the rise in educational expectations is superimposed upon the post-World-War-II population surge, it is apparent that these public institutions will be in an uncomfortable position with no relief in sight. Some believe the private institutions, under less political pressure to increase their enrollments, will certainly lose their proportional share of the student population within the next few years. This is hardly a reproach to them, since they do have limited sources of capital.

On the other hand, as current news stories remind us, the states are sorely pressed by today's costs of university support and can hardly be expected to prepare with enthusiasm for the greater demands of tomorrow. The Federal Government offers some aid to both state and private institutions, but much of that aid is by necessity highly selective. In other words, neither the Constitution nor existing laws permit the Federal government to address itself directly to the problems of the colleges and universities, so it comes to them largely as a customer for their research—and to some much more than to others.

What responsibility has business for this impending crisis? The responsibility is not based solely on the fact that other agencies of society are unable to handle the problem, although we have just implied this. The responsibility of business consists rather in its continuing contribution to the crisis by its insistence that the road to advancement begins with a college degree. Readers from the business community can hardly condemn this insistence. To most it is clear that business has necessarily responded to its own needs in an age of technology, and that is that. What may not be so clear is the implication that if business has contributed to a crisis which begins to weigh on the rest of society, it has a moral responsibility to lend a hand in relieving it. If education is the road to opportunity to all, as one man put it, the road had better not get blocked.

Possible remedies for the crisis in education. So far the crisis in education seems to be a crisis impending for the colleges during the next decade. Another observer, Paul Goodman, says, however, that it is already here in the high schools.[2] He implies that it began there about the time "drop-out" came into general currency —say, in the early fifties. Goodman considers that, beyond grammar school, compulsory education is mere confinement for all but a small fraction of the population. The alternatives to compulsory education which he suggests for bringing young people into a condition of adult employability are debatable. Nevertheless, his proposals have the advantage of at least suggesting that we might offer some socially acceptable choices to the 14-year-old who wants to leave school. Tentative approaches toward providing such choices have been undertaken, for example, by several Massachusetts public school systems during the past two years. These approaches are of concern to business because they involve some kind of work-study formula which divides the young person's time between school and a real job.

Goodman's political and philosophical position is more opposed to big government and big universities than to big business; he is more articulate about institutions which he is against than about those which he is for. It is not surprising, therefore, that he doesn't pursue the implications of his criticism of compulsory education for adolescents. His criticism would seem to point toward a reduction of the legal and effectual entering age for industrial employment from 16, or more often 18, back to 14. He implicitly agrees with this view in his repeated insistence that most people's education should take place not *for* but *on* the job. In effect, he holds that employers, not the state, are the agency of society which ought to be really concerned that young people have opportunity for education.

Margaret Mead comes to a virtually identical position not so much through concern with the ineffectiveness of present education as through awareness of the increasing complexity of our society and resulting dependence on life-

[2] Goodman, Paul, *Compulsory Mis-education*, Random House, New York, 1962, pp. 18, 20, 21, 57, 96, 127.

long education.[3] Her reaction is much more explicit than Goodman's: she feels that only business can take the responsibility for the education of most people in society because only business —not the state or the academic establishment— has a continuing relationship with most people through most of their lives. She insists that we must think again about our views of the dangers inherent in the employment of children under 16 or even 18. We must realize, she points out, that employment may be the only *practical* educational experience for a substantial portion of the population between 14 and 20. With her expert testimony of 1958 before us, it is easy to see why some would be dismayed by proposals that the states extend the age of compulsory schooling to 18.

In Margaret Mead's view, the trouble with compulsory schooling beyond grammar school is that it is based on an obsolete fiction—that is, that most people can squeeze all the formal education they will ever need into their lives before their productive lives begin. This opinion would be a harmless myth cherished by high school teachers and administrators to justify their labors with unappreciative adolescents if only so many of the adolescents themselves did not adopt it too and hold it as an article of faith for the rest of their lives. In a society like ours, where technological progress makes obsolete much of industry's capital investment in plant within 15 to 20 years or less, it is just possible that human capital may be at least equally subject to obsolescence. Only business, not government or the academic establishment, she believes, has accustomed itself to thinking in terms of the obsolescence of a capital investment. Hence business is the only appropriate agency of society to recognize and deal with obsolescence of the variety of skills which make up human capital.

We can sum up by saying that our society is trying to educate too many people too soon, and not enough people all their lives long.

Although another observer has in view primarily the problems of college-age youth, his ingenious proposal has wider implications.[4] He recommends a tax credit for individual taxpayers permitting them to deduct from their Federal income tax an amount equal or proportional to all tuition and related expenses of taxpayers, their dependents, and some others.

Freeman's proposal conveys great and perhaps immoderate advantages to institutions of higher learning. Such bodies, public and private, might thereby be enabled to shake off their present dependence on state legislatures, endowments, religious groups, and alumni and charge whatever tuition the traffic would bear. Because the Federal subsidy which would make this new independence possible would be indirect, it would entail no corresponding dependence of the institutions on the Federal Government. A major result of the subsidy would be that it would enable academic institutions to compete in the marketplace far more effectively than at present for all the goods and services they need to do a better job.

Freeman calculates that tax credits would be so adjusted that the increased costs of education resulting from higher tuition would amount to little or even no additional expense to students and their parents. Rightly, I believe, he urges that students would benefit greatly from his proposal because approximately the same net costs to them as today would buy better learning facilities, smaller classes, and more competent instructors. His proposal thus offers substantial advantages to that 40 percent of all Americans who today belong to what has been called the upper, semi-upper and limited-success classes. These are the people who enjoy the great competitive advantage, in the race for success, of having been brought up consciously to accept years of deferred gratification as the passport into whatever circle of America's diploma elite they desire to join.

For the remaining 60 percent of all Americans, however, Freeman's proposal does little. These are the people whom accidents of birth have placed in the classes for whose members a claim on higher education is largely self-fore-

[3] Mead, Margaret, "Thinking Ahead: Why Is Education Obsolete?" *Harvard Business Review*, November-December 1958.

[4] Freeman, Roger A., *Crisis in College Finance?* The Institute for Social Science Research, Washington, D.C., 1965, pp. 34-36.

closed because they live in the present rather than in the future. With the inexorable impartiality of biology, this means that perhaps 60 percent of America's talents—hardly less than 50 and perhaps as high as 70 percent—keep right on being born to that part of the population and are thereby very largely wasted. For not every talented or even able American youth enjoys the advantage of being convinced that he must resign himself to what is in effect a condition of social and economic dependency from the onset of puberty well into early adult life.

The gifted individual loses if his family background fails to enable him to respond to those economic incentives which lead through self-sacrifice to success. Society loses if a majority of all its able people in each generation fail to employ their gifts. Business loses with the rest of society and shares with the gifted individual an economic interest in unlocking his talents. This is why I believe that business can provide the conditions under which perhaps the majority of the population can reach the level of productivity to which their native abilities equip them, regardless of their education. If business closes the path of advancement to all but the diploma elite, it needs to provide a second path, an alternate route, circuitous but still open, for those whom the facts of society have deprived of the diploma in their early twenties.

The reader may properly wonder at this point whether business is not being asked to bite off more than it can chew. Granted, American enterprise may have a moral responsibility to do something about the crisis in education because it conspicuously profits from the fact that America has become an education state. But must we therefore expect business to solve that crisis in such a way as to solve larger social problems too—problems of social injustice? A reasonable answer to this question will be neither cynical nor idealistic. Business has to make a profit in today's world; it cannot assume responsibility for solving problems of social injustice before they become the concern of society at large. On the other hand, a business which plans for the future can no more ignore trends in the values of society than it can ignore demographic trends, or trends in major markets and sources of raw materials.

Thus if business is not expected to solve social problems, it may be expected not to make them worse. In 1967 it would be a hostile critic who accused management of discriminating against people who lack degrees because they were born into the "wrong" kind of family. (As everyone knows, responsible jobs take brains, and a diploma is convenient if not irrefutable evidence of brains, even though many brainy people do not get one.) In 1964, likewise, only a hostile critic would have accused management of discriminating against people who were illiterate or lacked eighth-grade arithmetic skills because they were born into the "wrong" kind of family. After all, there are some jobs for which one must be able to read and figure, and that's it. In 1967, however, management is evidently taking steps to forestall such criticism. It is actively encouraging and supporting the education of employees, and sometimes even of prospective employees, in the basic skills of reading and arithmetic, with an eye to possible interpretations of *existing* civil rights laws.

Gross National Product in the education state. In 1962 a study was published that sought to identify and compare various factors which made the American economy grow during the periods 1909-1929 and 1929-1957.[5] The author measured economic growth as the change between any two values of the Gross National Product normalized to 1954 dollars. He then used these facts to predict the effect of corresponding factors in the economy on economic growth during the two decades 1960-1980. He concluded that education, measured by the years of schooling of the labor force, has outstripped capital and has approached labor—as measured by the man-hours of the labor force—as the dynamic element in the economy.

Increased education of the labor force accounted for 23 percent of American economic growth between 1929 and 1957, but for only 12 percent of the growth between 1909 and 1929. In contrast, the increase in the man-hours worked by the labor force, and the increased value of capital in constant dollars, accounted respectively for only 27 and 15 percent of Amer-

[5] Denison, Edward F., *The Sources of Economic Growth in the United States,* Committee for Economic Development, New York, 1962.

ican economic growth between 1929 and 1957, but for 39 and 26 percent, respectively, of the growth between 1909 and 1929.

The author emphasized the novel and exploratory character of his study. In conducting it, he brought together economic data from widely scattered sources and thereby directed attention to the availability of time series bearing on economic growth and the desirability of collecting these in a single publication, regularly revised.

The implication of this line of inquiry is that measurement of these factors is a first step toward controlling and stimulating them. Of the three factors under consideration—education, capital and labor—education is far more accessible to manipulation as a variable than the other two. In other words, the undertakings necessary to increase the level of education of the labor force are much more within our grasp than the undertakings necessary to increase capital in constant dollars or labor in man-hours. Facts cited above as to the growth in college attendance demonstrate that America has in fact laid hands on the level of education as the most manipulable major variable in its national economy. Denison's study establishes beyond any doubt the wisdom of this decision.

Having anticipated America's massive need for a more educated labor force, business has in effect both responded to and created that need. Now, however, the need is recognized to be a matter of public concern accessible to economic planning. If business is unwilling to take a leading role in this planning, there seems little doubt that the planning will be done by agencies of government. Some are not necessarily sympathetic to business, and some are probably less able than business to encourage people to follow a career rather than an unplanned succession of retraining assignments.

EMPLOYEE EDUCATION AS OFFSET TO TURNOVER COSTS

It is easy to forget that payroll is only one of two major costs involved in staffing an enterprise. The other, stated in most general terms, is the cost of labor turnover. Unlike payroll costs, the costs of turnover result from many small decisions, not all of them made by management, and are scattered among many accounts where they are largely invisible to management. The reasons for turnover are complex and not entirely rational until we recognize in them human needs that are probably met to a considerable extent by programs of employee education. Once we identify the costs of turnover and show how employee education meets those needs, it becomes apparent that relatively small savings in turnover can support substantial programs of employee education.

Turnover *costs* are a paradox. Turnover rates are easy to measure—for the whole economy, an industry, or a region. Using the *Monthly Labor Review* of the Bureau of Labor Statistics, a company need only pattern its records on the *Review's* categories, making sure in each case that its definitions coincide with the *Review's.* It can then calculate turnover according to any of several appropriate definitions and evaluate its own effectiveness in a wide area of human relations issues against various external yardsticks. Often more important, a company can develop similar statistics internally, make comparisons, and either justify or control any substantial differences among divisional turnover rates.

Turnover *costs* are another matter. No one knows what these amount to, but men responsible for the recruitment of professionals are uneasy about what they see and even more uneasy about what they don't see. The complexity of all the items which need to be taken into account in costing turnover is seen in the following list:[6]

A. RECRUITMENT COSTS
   1. Advertising.
   2. College recruiting.
   3. Employment agency fees.
   4. Brochures, booklets, exhibits.
   5. Prizes and awards to employees.
   6. Public relations activities.

B. SELECTION AND PLACEMENT COSTS
   1. Letters of application.
   2. Application blanks.

[6] This list is a reproduction of the headings in the section entitled "The Replacement Cost Calculation Method" in Gaudet, Frederick J., *Labor Turnover Calculation and Cost,* Research Study 39, American Management Association, New York, 1960, pp. 39-57.

3. Interviewing (personnel department).
4. Interviewing (line management).
5. Medical examinations.
6. References.
7. Psychological testing.
8. Applicant's travel expenses.
9. Security and credit investigation.
10. Personnel department overhead.

C. ON-THE-JOB COSTS
1. Putting the man on the job.
2. Company badge.
3. Safety glasses.
4. Indoctrination and training costs.
5. Formal training programs.
6. Break-in-costs:
   a. Increased cost of productivity.
   b. Increased cost of supervision.
   c. Higher inspection costs.
   d. Increased maintenance or depreciation costs.
   e. Higher accident costs.

D. COST OF SEPARATING INCUMBENT
1. Exit interviews.
2. Severance pay.
3. Extra social security tax costs.
4. Increased unemployment insurance costs.
5. Intangible costs.

In most companies, the Personnel Department would be responsible for nearly two-thirds of the items in the table. But items A.4, A.6, B.4, C.1, C.4, C.5, C.6.*a-e,* and D.4 would in many firms be handled in accounting very far from the control of the Personnel Department. Moreover, three of these items, interviews by line management, indoctrination and training costs, and formal training programs, are among the half-dozen most costly items of the whole list. Significantly, Gaudet makes no attempt to supply typical costs for the break-in costs. The most effective procedures for assigning costs to most of these items are probably the industrial engineers' learning-curve techniques, which are still not so widely known as they should be.

Without such techniques, most firms have no way of accurately evaluating break-in costs. The best statement which can be made in many cases is that these costs may exceed by several times the sum of all the other items in the list.

Another factor to consider here is the great difference between the productivity of the average employee in one firm and the average employee in another. It may be safely assumed that not merely productivity costs but also costs of supervision and inspection are roughly proportional to such differences in productivity. We have already introduced the national average productivity rate (net annual sales per employee) of $9,290 (1965) as a basis for the formal training example given earlier in this Bulletin. A firm with the productivity rate of $20,000 or $30,000 thus has a good chance of incurring break-in costs two or three times the national average. If other things were equal, its total turnover costs might be similarly greater as a consequence. In view of the great effect which break-in costs may have on the cost of turnover, it seems doubtful that even the most exact calculation of the other items does any good at all unless it is supplemented by learning-curve information for many of the jobs involved.

Conceptually, it might even be simpler to figure the learning curve for every job in the business and *assume* that all other turnover costs were proportional to break-in costs. The difficulties of such a procedure when applied to professional jobs, or to nonexempt jobs remote from production, are all too apparent. Nevertheless, once management has resolved to grit its teeth and make the necessary assumptions, the procedure would not be difficult to apply. It would, in effect, be far more accurate than a procedure based on an enumeration of the components of turnover cost that generally isn't used at all because it is so difficult in practice.

We are suggesting, then, that personnel administrators and company management adopt the practice of estimating the turnover cost for a particular job as a constant multiple—say, from 1.3 to 2.5—of the break-in costs for that job as developed or extrapolated from learning-curve data provided by the industrial engineer. With all its inaccuracies, such a procedure would serve to remind all concerned, including operating management, of facts which are now all but forgotten and which, indeed, it seems to be no one's job to remember. Among them are the following: recruitment is a major element of turnover; turnover costs money; and turnover

in some jobs costs many times what it costs in others.

This reminder would operate on everyone in the firm, inside or outside the Personnel Department, who is concerned with manpower procurement. It would help the personnel executive to inspire his staff to control the many components of turnover which, as we have seen, lie within their control. Most of all, by estimating turnover costs in terms which emphasize that they are everyone's problem, the recommended procedure would relieve the personnel executive of the nagging fear which tells him simultaneously that turnover costs are his problem exclusively and yet he can do nothing about them. This anxiety is convincingly stated by Gaudet:

> The personnel or industrial relations director has the same problem as the controller. He cannot get exact figures. But the personnel people have another, perhaps even stronger, reason for not obtaining and reporting the cost of labor turnover to top management. The personnel officer who brings to the attention of his superiors the information that turnover accounts for 10 or 15 percent of the entire cost of productivity should, in popular parlance, have his head examined.[7]

Employee education and turnover. Why have we devoted so much attention to the cost of turnover? Because the price of turnover and the price of employee education may to a major extent be stamped on opposite sides of the same coin. Merely in terms of its own survival and its own financial statement, without regard to the issues raised above, a company may spend at least as much on unnecessary turnover as it might spend on a program of employee education tending to prevent turnover.

No experimental data are available to show that turnover or the cost of turnover has been reduced in a particular instance by the introduction of an employee-education program. However, we offered a theory of human motivation which presents employee education as a means of meeting the employee's highest-level need—his need for self-actualization. Gaudet's evidence that turnover serves the same need, not one of the lower-level needs, casts doubt on the obvious reason why people leave us to join another firm, or leave another firm to join us—better pay.

Economists consider turnover as evidence of the very thing that the older theory of wages hypothesizes: that wages are set by supply and demand. To be sure, this *is* the reason which people most often give the exit interviewer when leaving a firm. Yet a number of students of the subject are not convinced that increased wages are a major explanation of turnover. People say they are leaving a firm for many other reasons besides pay, and some of these may prove false when subjected to objective investigation—for example, a statement that one's family is moving out of the community. Like moving, higher pay may be a mere convenient rationalization which the departing employee considers likely to be accepted without challenge by the interviewer—who is usually untrained in getting past the good reason to the real one.

Apart from these negative considerations of the bearing of wages on turnover, there is clear evidence that the need for self-actualization, rather than any lower-level need, is a controlling reason. We cannot measure changes in the labor force's *need* for self-actualization. However, the business cycle itself—the level of business activity—is a measure of people's *opportunity* to satisfy that need. Peaks in the business cycle are times not so much of high wages as of high availability of job opportunities—opportunities to explore the world of careers without risking the penalties of job-hopping in quieter times. Gaudet shows that there are startling parallels between business activity and total turnover and between business activity and voluntary separations. He cites this fact to illustrate the point that both external and internal factors contribute to turnover and that a company should at least try to reduce those internal factors under its control. Opportunities to do just this are provided by an employee-education program.

Payback of employee education. If employee education has an economic justification for the individual business, this consists in its tendency to reduce either average turnover, average cost of turnover, or both. A complete demonstration of this payback would require a model similar to that introduced in Table 2 for the purpose of there calculating the cost of formal training,

[7] Gaudet, *op. cit.*, p. 12.

the cost of doing without it, and the resulting payback. First of all, we should require quantitative assumptions about average cost of turnover.

If we cannot provide a numerical model like that used earlier, we must confine our demonstration of payback to reasoning about inequalities—in other words, we must show that employee education tends to reduce by unspecified amounts either average turnover, average cost of turnover, or both. Further, whenever it reduces just one, it must not increase the other. In addition, we must rely on common sense to make sure only reductions of sufficient size to affect significantly the gross cost of turnover and thereby promise a payback are claimed.

To this end we shall discuss five substantial consequences of an employee-education program. The first affects average turnover; the second, third, and fourth affect average cost of turnover, and the fifth affects both. It should be noted that all five of the consequences considered tend to reduce the gross cost of turnover, because we are considering effects on averages. Insofar as any procedure reduces average turnover without raising the average cost of turnover, it operates to reduce the gross cost. With an employee-education program we can expect the following:

1. Lower turnover on all jobs. Employees sense that more personal attention is available to them whether they seek it or not.
2. Lower recruitment costs for unneeded new professionals hired to fill urgently needed semiprofessional jobs. Present employees will be developed in advance of need to fill these semiprofessional jobs.
3. Lower recruitment costs on all jobs at all levels. The company becomes basically a more attractive place to work.
4. Lower recruitment costs for many exempt and some professional jobs. The company fills them by promoting nonexempt people, who are replaced at a small fraction of the cost of hiring exempt ones.
5. Lower turnover and lower recruitment costs for scientists and engineers who are the most costly to recruit. These are precisely the employees who are most concerned about professional obsolescence and who are therefore committed to continue their education.

Lower turnover on all jobs. We have no direct evidence that an employee-education program reduces turnover across the board. However, certain other policies do seem to have this effect—policies which in one way or another convey to the labor force a feeling of management's concern for them. Gaudet cites two examples: apprentice programs and exit interviews. Since an employee-education program amounts to more direct evidence of concern for all employees than either of the instances cited, it is reasonable to infer that it would have at least as much effect on turnover.

Lower recruitment costs for unneeded professionals. The nation's present and prospective shortage of engineering graduates is well known. Something less well appreciated, however, is the continuing shortage of semiprofessionals—that is, technicians in most of the fields where a shortage of engineers is recognized. The optimal working ratio in industry is held to be at least five technicians to every engineer; the actual ratio in 90 American firms surveyed in 1957-1958 was about 0.8 to 1.[8] Despite the fact that this period was largely one of declining business activity and high unemployment, there was a genuine shortage of technicians in the labor market.

Harbison and Myers leave no doubt that the cause of this persisting shortage of subprofessionals is industry's failure to train and educate them, a point also made by another observer.[9] They urge that it is no use to blame this shortage on America's vocational and technical schools, since Japan, Great Britain, and the U.S.S.R. all accomplish the task rather by employer-directed than by school-directed programs. The consequence of the shortage of subprofessionals, however, is to aggravate the short-

[8] Harbison, Frederick and Charles A. Myers, *Education, Manpower and Economic Growth: Strategies of Human Resource Development,* McGraw-Hill, New York, 1964, p. 164.

[9] Froomkin, Joseph, "Jobs, Skills, and Realities," *Columbia University Forum,* Spring 1964, p. 32.

age of engineers. Many companies hoard engineers and use them as technicans because technicans are not to be found.

These facts suggest that the company that develops its own technicians to fill engineering-aide and engineering-technician assignments will avoid the costs of recruiting engineers to do the work of engineering aides. Moreover, it will continue to save an on-going expense distinct from turnover—the higher pay of the engineer thus mis-assigned.

Lower external recruitment costs. Nonexempt employees of a company with an employee-education program spread the word among their peers, sometimes more effectively than newspaper stories or advertising. The resulting word-of-mouth information reaches many prospective employees who may not even be looking for a job until they hear it, and who therefore never look at help-wanted pages in the newspapers.

The attractive effect of such a program on new college graduates may be even greater, because they have spent most of their lives in an educational environment. As a result, the first job in business is rendered less frightening for many by the knowledge that it provides continuing opportunity for education.

When the older professional considers making a move to a new employer, one of the questions he asks himself is whether his next substantial advance will be within *that* firm or outside once more. Rightly or wrongly, he will consider the existence of an employee-education program as evidence of his prospective employer's commitment to promote from within.

Lower recruitment costs for jobs filled from within. Other things being equal, a firm with an employee-education program has more valid reasons to fill jobs on any level from within. To the extent that a given job on any level is filled from within, again other things being equal, it will be filled at a lower recruitment cost. This fact is readily established by a review of those items in the list of costs of turnover previously noted that do *not* apply to a person moving from one job to another in the company. It is true, as Gaudet points out, that a chain reaction of transfers resulting from a settled policy of promoting from within may be expensive. He does not mention, however, the fact that there is no assurance in any case that a man will stay with the company if he does not move when he feels that he is ready to. Internal turnover may save the employer more costly external turnover.

Lower turnover and recruitment costs for scarce professionals. Over and above its attraction for any new college graduate, the employee-education program has a special attraction for the young engineer. More than the others, he is coming to realize that technological change requires him to get a master's degree, even though a bachelor's degree was enough to get him a job.

It is just this kind of employee who, apart from the researcher with a Ph.D., is most costly for the firm to recruit. A group of controllers whose estimates for the spring of 1958 were reported by Gaudet estimated mean replacement costs for engineers at 15 times those for clerical and production employees and 10 times those for maintenance and sales employees. There is certainly no indication that engineers are any easier to recruit today.

It is generally acknowledged, on the contrary, that industry's needs for engineers will grow for the foreseeable future faster than our society's ability to produce them. In the light of this fact, it is specially significant that the employee-education program's pulling power is greatest for the very class of employee whom it costs most to attract in any other way.

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